

1 8. (Amended) The method of claim 7 wherein the spectral content analysis comprises
2 estimating a mean [and variance of] the estimated frequency, and comparing the estimated mean [and
3 variance] to a [at least one] frequency range [threshold].

1 9. (Amended) The method of claim 1 wherein the monitoring of the temporal
2 characteristic of the indicator comprises estimating a duration of the indicator over time, and
3 comparing the estimated duration to a [at least one] threshold, the call progress tone detection being
4 based on the comparison.

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1 10 (Amended) A method for detecting a call progress tone [tones] in a composite signal
2 having a plurality of components, comprising:
3 separating the components of the composite signal;
4 analyzing spectral content for each of the separated components;
5 selectively generating an indicator for each of the separated components whose
6 spectral content satisfies a respective criteria;
7 monitoring a temporal characteristic for each of the indicators; and
8 detecting the call progress tone [tones] in the composite signal based on the monitored
9 temporal characteristics.

1 16. (Amended) The method of claim 10 further comprising estimating power for each
2 of the components, comparing the estimated power for each of the components with a [at least one]
3 respective threshold, and invoking the spectral content analysis for each component based on the
4 comparison.

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1 19. (Amended) The method of claim 18 wherein the spectral content analysis comprises
2 estimating a mean [and variance] of the estimated frequency for each of the components, and
3 comparing the estimated mean [and variance] to a [at least one] respective frequency range
4 [threshold].

1 20. (Amended) The method of claim 10 wherein the monitoring of the temporal
2 characteristic for each of the indications comprises estimating a duration of the respective indicator
3 over time, and comparing the estimated duration for each of the components to at least one
4 respective threshold, the call progress tone detection being based on the comparison.

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1 21. (Amended) A system for detecting a call progress tone in a signal, comprising:
2 a signal processor to selectively analyze spectral content of the signal and generate
3 an indicator if the spectral content of the signal satisfies a criteria; and
4 a cadence processor to monitor a temporal characteristic of the indicator and detect
5 the call progress tone based on the temporal characteristic.

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1 23. (Amended) The system of claim 22 wherein the call progress tone comprises one of
2 a plurality of tones each having a frequency, and wherein the low pass filter removes frequency
3 components in the signal above the highest frequency.

1 26. (Amended) The system of claim 21 wherein the cadence processor comprises a
2 cadence state machine responsive to the indicator, a counter enabled by the cadence state machine
3 and which estimates cadence of the indicator, and cadence logic to compare the cadence of the
4 indicator to a [at least one] threshold to detect the call progress tone.

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1 27. (Amended) A system for detecting a call progress tone [tones] in a composite signal
2 having a plurality of components, comprising:
3 a plurality of bandpass filters to separate the components of the composite signal;
4 a plurality of differential detectors each which estimates a frequency for one of the
5 components;
6 a plurality of frequency calculators each which analysis a mean [and variance] of the
7 estimated frequency for one of the components and generates a tone indicator as a function of the
8 analysis; and

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2 a cadence processor that monitors a temporal characteristic of each of the tone
3 indicators and detects the call progress tone [tones] in the composite signal based on the temporal
monitoring.

1 31. (Amended) The system of claim 27 wherein the cadence processor comprises a
2 cadence state machine responsive to the tone indicators, a counter to estimate cadence of the tone
3 indicators, and cadence logic which compares the cadence of the tone indicators to a [at least one]
4 respective threshold to detect the call progress tone [tones] in the composite signal.

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1 32. (Amended) A data transmission system, comprising:
2 a telephony device which outputs a signal having a call progress tone; and
3 a data exchange coupled to the telephony device, the data exchange comprising a
4 signal processor to selectively analyze spectral content of the signal and generate an indicator if the
5 spectral content of the signal satisfies a criteria, and a cadence processor to monitor a temporal
6 characteristic of the indicator and detect the call progress tone based on the temporal characteristic.

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1 34. (Amended) The data transmission system of claim 33 wherein the call progress tone
2 comprises one of a plurality of tones each having a frequency, and wherein the low pass filter
3 removes frequency components in the signal above the highest frequency.

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1 37. (Amended) The system of claim 32 wherein the cadence processor comprises a
2 cadence state machine responsive to the indicator, a counter enabled by the cadence state machine
3 and which estimates cadence of the indicator, and cadence logic to compare the cadence of the
4 indicator to a [at least one] threshold to detect the call progress tone.

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1 40. (Amended) A system for detecting a call progress tone in a signal, comprising:
2 analyzing means for selectively analyzing spectral content of the signal and
3 generating an indicator if the spectral content of the signal satisfies a criteria; and

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Claim 2

detection means for monitoring a temporal characteristic of the indicator and detecting the call progress tone based on the temporal characteristic.

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1 42. (Amended) The system of claim 41 wherein the call progress tone comprises one of a
2 plurality of tones each having a frequency, and wherein the filtering means removes frequency components
3 in the signal above the highest frequency.

1 45. (Amended) The system of claim 40 wherein the detection means comprises means for
2 estimating cadence of the indicator, and means for comparing the cadence of the indicator to a [at least one]
3 threshold to detect the call progress tone.

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1 46. (Amended) A system for detecting a call progress tone [tones] in a composite signal having
2 a plurality of components, comprising:
3 separation means for separating the components of the composite signal;
4 frequency estimation means for estimating a frequency for each one of the components;
5 analyzing means for analyzing a mean and variance of the estimated frequency for one of
6 the components and generating a tone indicator as a function of the analysis; and
7 detection means for monitoring a temporal characteristic of each of the tone indicators and
8 detecting the call progress tone [tones] in the composite signal based on the temporal monitoring.

1 51. (Amended) The system of claim 46 wherein the detection means comprises means
2 for estimating cadence of the tone indicators, and means for comparing the cadence of the tone
3 indicators to a [at least one] threshold to detect the call progress tone [tones] in the composite signal.

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1 52. (Amended) Computer-readable media embodying a program of instructions
2 executable by a computer to perform a method of detecting a call progress tone in a signal, the
3 method comprising:
4 selectively analyzing spectral content of the signal;
5 generating an indicator if the analyzed spectral content of the signal satisfies a criteria;
6 monitoring a temporal characteristic of the indicator; and

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detecting the call progress tone based on the monitored temporal characteristic.

1 56. (Amended) The computer-readable media of claim 55 wherein the method further
2 comprises estimating power of the downsampled signal, comparing the estimated power with a [at
3 least one] threshold, and invoking the spectral content analysis based on the comparison.

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1 57. (Amended) The computer-readable media of claim 56 wherein the comparison of the
2 estimated power with the [at least one] threshold comprises generating a series of power indicators
3 over time, the spectral content analysis being invoked upon the generation of consecutive power
4 indicators each satisfying a power criteria.

1 59. (Amended) The computer-readable media of claim 58 wherein the frequency
2 detection comprises estimating a mean [and variance] of the frequency of the downsampled signal,
3 and comparing the estimated mean [and variance] to a [at least one] frequency range [threshold].

1 60. (Amended) The computer-readable media of claim 52 wherein the monitoring of the
2 temporal characteristic of the indicator comprises estimating a duration of the indicator over time,
3 and comparing the estimated duration to a [at least one] threshold, the call progress tone detection
4 being based on the comparison.

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1 61. (Amended) Computer-readable media embodying a program of instructions
2 executable by a computer to perform a method of detecting a call progress tone [tones] in a
3 composite signal having a plurality of components, the method comprising:
4 separating the components of the composite signal;
5 analyzing spectral content for each of the separated components;
6 selectively generating an indicator for each of the separated components whose
7 spectral content satisfies a respective criteria;
8 monitoring a temporal characteristic for each of the indicators; and